# REMARKS

## I. Status of Claims

Claims 1-12 are pending in the application. Claims 1, 5, and 6 are independent.

Claims 1, 2, 5, and 6 stand rejected under 35 USC 102(b) as allegedly being anticipated by Tabata et al. (USP 5,833,570) ("Tabata").

Claims 4 and 9 stand rejected under 35 USC 103(a) as allegedly being unpatentable over Tabata in view of Eguchi et al (USPGPUB 2003/0109360) ("Eguchi").

Claims 3, 7- 8, and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of their base claims and any intervening claims.

The Applicant respectfully requests reconsideration of the rejections in view of the foregoing amendments and the following remarks.

## II. Allowable Subject Matter

Claims 3, 7, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of their base claims and any intervening claims.

## III. Remarks Regarding Independent Claims 1, 5, and 6

Independent claims 1, 5, and 6 stand rejected under 35 USC 102(b) as allegedly being anticipated by Tabata.

The Applicant respectfully submits claim 1 is patentable over Tabata at least because it recites, *inter alia*, "…learning means for learning a relationship between an output torque of the motor for maintaining the rotational speed of the motor at the predetermined rotational speed and the hydraulic pressure command value when ***the output torque*** of the motor ***increases to a predetermined value while the hydraulic pressure command value is changed from zero.***" (emphasis added)

The Applicant respectfully submits claim 5 is patentable over Tabata at least because it recites, *inter alia*, "...learning a relationship between an output torque of the motor and the hydraulic pressure command value when *the output torque* of the motor for maintaining the rotational speed of the motor at the predetermined rotational speed *increases to a predetermined value while the hydraulic pressure command value is changed from zero*." (emphasis added)
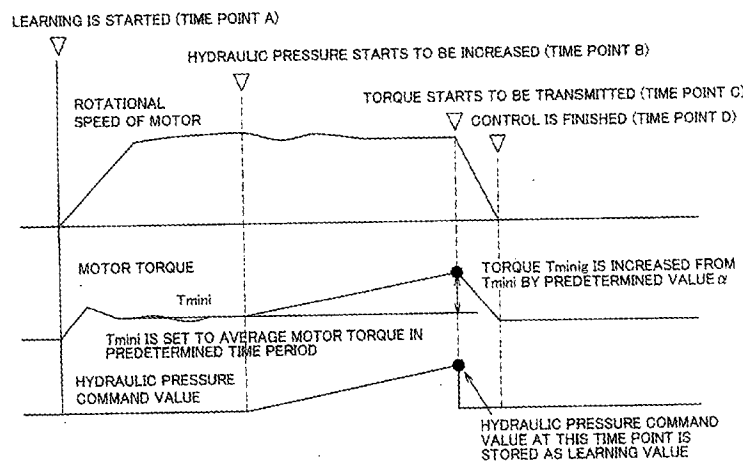
The Applicant respectfully submits claim 6 is patentable over Tabata at least because it recites, *inter alia*, "...a third control device which learns a relationship between an output torque of the motor for maintaining the rotational speed of the motor at the predetermined rotational speed and the hydraulic pressure command value when *the output torque* of the motor *increases to a predetermined value while the hydraulic pressure command value is changed from zero*." (emphasis added)

Certain embodiments of the present invention provide a control apparatus and a control method for a drive apparatus of a hybrid vehicle, which includes a torque transmitting member whose torque capacity is changed according to an engagement control amount (e.g., a hydraulic pressure command value), and which can accurately set a relationship between an hydraulic pressure command value and the torque capacity in an initial stage when the torque transmitting member starts to transmit torque. More specifically, a relationship between an hydraulic pressure command value and torque capacity of a torque transmitting member is learned based on a change in a behavior or a control amount of a motor, which is caused while the hydraulic pressure command value of the torque transmitting member is changed from zero in a drive apparatus of a hybrid vehicle. *See* paragraphs [0007] and [0008] of the application as published.

Using certain embodiments of the present invention, it is possible to accurately learn the characteristic of the brake B1 (or B2) during the initial state of the engagement. For example, when an hydraulic pressure command value of the brake B1 (or B2) that is provided between the second motor/generator 5 and the output shaft is changed while the rotational speed of the second motor/generator 5 is maintained at the predetermined rotational speed, torque acting on the second motor/generator 5 is changed, and therefore, torque necessary for maintaining the

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rotational speed is changed. The output torque of the second motor/generator 5 can be accurately detected, for example, based on the electric current value. Since the output torque corresponds to the torque capacity of the brake B1 (or B2), as shown in FIG. 2 of the Application reproduced below, when *the output torque* of the second motor/generator 5 *increases to the predetermined value*, it is possible to learn the relationship between the output torque of the motor/generator 5 and the hydraulic pressure command value, that is,

## F I G. 2



LEARNING IS STARTED (TIME POINT A)

HYDRAULIC PRESSURE STARTS TO BE INCREASED (TIME POINT B)

ROTATIONAL
SPEED OF MOTOR

TORQUE STARTS TO BE TRANSMITTED (TIME POINT C)

CONTROL IS FINISHED (TIME POINT D)

MOTOR TORQUE

Tmini

TORQUE Tminig IS INCREASED FROM
Tmini BY PREDETERMINED VALUE α

Tmini IS SET TO AVERAGE MOTOR TORQUE IN
PREDETERMINED TIME PERIOD

HYDRAULIC PRESSURE
COMMAND VALUE

HYDRAULIC PRESSURE COMMAND
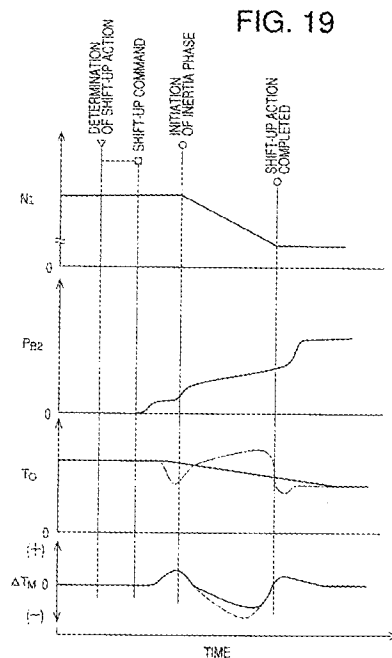VALUE AT THIS TIME POINT IS
STORED AS LEARNING VALUE

the relationship between the torque capacity of the brake B1 (or B2) and the hydraulic pressure command value, without being influenced by noise or the like. Also, since the initial torque of the second motor/generator 5 is detected while the hydraulic pressure command value is zero, the initial torque is detected as the drag torque of the brake B2 (or B2). Therefore, it is possible to accurately detect the drag torque of the brake B1 (or B2). Further, when the output torque of the second motor/generator 5 exceeds the torque obtained by adding the predetermined value to the drag torque while the hydraulic pressure command value is changed from zero, the relationship between the hydraulic pressure command value and the torque capacity of the brake B1 (or B2) is learned. *See* paragraphs [0046] and [0047] of the application as published.

The Examiner cites to Tabata's FIG. 19 to allege that Tabata teaches all limitations of claims 1, 5 and 6. However, in contrast to the inventions of claims 1, 5, and 6, which recite the feature of the learning process shown above in FIG. 2 of the application, as shown below in

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reproduced FIG. 19 of Tabata, Tabata merely shows the output torque $T_o$ would go up and down (as shown by the one–dot chain line) between the shift-up command and the shift-up action completed instead of a smooth linear decrease (as shown by the solid line) for the same time period. *See also*, Tabata, col. 31, ll. 13-18. According to the learning control of Tabata, an initial pressure of a friction engagement is learned based on the average value of a feed-back control amount of a motor-generator during the inertia phase. Further, Tabata's uncontrolled output torque $T_o$ only has an increase when the rotation speed $N_I$ decreases instead of being maintained at a predetermined rotational speed. Thus, Tabata does not teach or suggest *learning a relationship* between an output torque of the motor for maintaining the rotational speed of the motor at the predetermined rotational speed and the hydraulic pressure command value *when the output torque of the motor increases to a predetermined value while the hydraulic pressure command value is changed from zero.*.[1] It is noted that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

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[1] Evidencing the Applicant's position, the Examiner is encouraged to consult the "Written Opinion of the International Searching Authority" and the "EPO counterpart" (which we note found the pending claims novel and non-obvious).

FIG. 19



Also, it would not have been obvious to modify Tabata in the manner as claimed. As discussed in MPEP 2143.01, obviousness can *only* be established by combining or modifying the *teachings of the prior art* to produce the claimed invention where there is some *teaching, suggestion, or motivation* to do so in *the prior art itself. In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching *>test< as a guard against using hindsight in an obviousness analysis).

Moreover, the Applicant respectfully submits that Eguchi does not cure the critical deficiencies discussed above with respect to Tabata. Further, neither Tabata nor Eguchi identifies a reason why one of ordinary skill in the art would modify Tabata in the manner as claimed by the Applicant. It is respectfully submitted that, as discussed in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007), it remains necessary to identify the reason why a person of ordinary skill in the art would have been prompted to combine alleged prior art elements in the manner as claimed by the Applicant. Obviousness cannot be sustained upon mere conclusory statements.

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Thus, the Applicant respectfully submits that claims 1, 5, and 6 are patentable over Tabata and respectfully requests reconsideration and withdrawal of the rejections.


## IV.   <u>Conclusion</u>

In light of the above discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Office Action is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. ***The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.***


Respectfully submitted,


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